

ABSTRACT

A method of forming a buffer dielectric film in a semiconductor device and a method of manufacturing a thin film transistor using the same are disclosed. By forming a buffer dielectric film containing porous silica
5 material having low heat conductivity between the amorphous silicon layer and the substrate to minimize the heat transfer to the substrate and forming the polysilicon active layer using the laser in the state of securing the crystal growth time, polysilicon active layer having a maximized crystal particle size can be formed to improve the charge mobility of the device, in case of
10 crystallizing the amorphous silicon layer by the ELA method, and the length of the SLG (Super Lateral Grain) can be increased to prevent the nucleation phenomenon from being generated at the portion that the crystals meet and thus the moved number of the mask can be minimized and the throughput of the process can be improved, though the interval of the mask pattern is
15 increased, in case of crystallizing the amorphous silicon by the SLS method.